Wolf attacks on livestock, and its impact on attitudes towards wolves in Sweden

Attityder till varg i förhållande till antalet vargangrepp i Sverige

Hanna Rogers

Skara 2014

Etologi och djurskyddsprogrammet

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Photo: Apelqvist, 2011

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Abstract

Conflicts between humans and wildlife are a problem in todays society. An important factor in this conflict is predation on livestock by mammalian carnivores. In Sweden this conflict is mainly focused on wolves (*Canis lupus*) and how people perceive wolves. The main prey for wolves in Sweden is the moose (*Alces alces*), but predation on livestock also occurs. Attitudes towards wolves are influenced by a number of things. Proximity, social group, education, if the person is a hunter or not and negative experience are factors that can influence attitudes. Negative experience could be an important factor due to non-consumptive effects. Non-consumptive effects are indirect effects on a prey animal in response to the presence of a predator. These effects could result in weight loss, impaired reproduction, stress and vulnerability to infections in the affected animal. All this could lead to economic losses for the livestock owner and may result in a negative attitude. The aim of this study was to assess if positive attitudes towards wolves could be influenced by the number of attacked animals in Sweden between the years 2004 and 2009. The aim was also to discuss other factors that could influence attitudes and if non-consumptive effects could be of importance. The results showed that the positive attitudes on a national level had increased as had the number of attacked animals. In most of the counties with established predator populations the positive attitudes had decreased while the number of attacked animals had increased. However, the number of attacked animals in these counties fluctuated and did not seem to be in accordance with the attitudes. The results indicated that the number of attacked animals was not a strong factor in determining attitudes, and that other factors seem to be of more importance. Other factors could be proximity, since in the counties with more than one wolf territory the attitudes had decreased; social group, people in ones surrounding have an influence on your opinions, and/or if the respondent is a hunter; hunters and wolves compete over game. Non-consumptive effects could also be a factor since livestock owners in Sweden do not get compensation for this. Since non-consumptive effects could result in greater economic losses than direct effects there are reason to believe that non-consumptive effects influence the owners attitudes. One solution to this could be to start compensating for non-consumptive effects, but more research is needed before this becomes relevant.

Introduction

Conflicts between wildlife and humans are a problem in todays society and have been the subject of research worldwide (Graham *et al.,* 2005). Predation on livestock by mammalian carnivores is a major issue in this conflict and has led to a discord between livestock owners and conservation managements (Mech, 1981).

In many countries, including Sweden, the wolf (*Canis lupus*) is a key species when discussing the human – carnivore conflict. The existence and distribution of wolves in Sweden is a subject of debate today and attitudes towards wolves vary throughout the country (Ericsson & Heberlein, 2003; Karlsson & Sjöström. 2007). Wolves predominately prey on moose (*Alces alces*) in Scandinavia (Viltskadecenter, 2014a; Kojola *et al.* 2004) but predation on livestock also occurs, and then mainly on sheep (Viltskadecenter, 2014b).

Effects of predation

Wolf predation on livestock can lead to economic losses in form of killed or injured animals. Apart from the economic losses when livestock are killed, the presence of wolves can affect livestock in a way that could lead to further economic losses (Muhly *et al.,* 2010; Laporte *et al.,* 2010). These indirect effects on prey, in response to the presence of a predator, are called risk effects or non-consumptive effects and can have a strong negative impact on the welfare of the prey (Creel & Christianson, 2007; Preisser & Bolnick, 2008; Laporte *et al.,* 2010; Muhly *et al.,* 2010). For example, Fuelling & Halle (2004) noted that female voles subjected to odors from a predator had suppressed breeding. Studies have also shown that the presence of wolves can alter the behaviour of the prey which could, for example, have a negative effect on: the preys food intake, reproduction, vulnerability to infections and it could also induce stress (Laporte *et al.,* 2010; Muhly *et al.,* 2010; Travers *et al.,* 2010).

The predation on livestock could also affect the owner emotionally (Zilcha-Mano *et al.,* 2011). These authors noted that some pet owners reaction to the loss of a pet was associated with, among other things, social isolation and self- and other-blame.

Attitudes towards wolf in Sweden

Attitudes toward wolves in Sweden are influenced by a number of different factors, but studies have shown that distance is of significant importance (Ericsson & Heberlein, 2003; Karlsson & Sjöström, 2007). Ericsson & Heberlein (2003) noted that hunters living in an area populated by wolves had a more negative attitude towards the animals compared to other hunters and non-hunters. The key factors in this study that affected the attitudes were proximity to wolves and if the respondent were a hunter or not. Karlsson & Sjöström (2007) also noted that distance to wolves had a significant effect on attitudes towards them. They noted that people living in close proximity to wolves had a more negative attitude.

Other factors that determine attitudes toward wolves are education, owning a hunting dog and age (Ericsson & Heberlein, 2003; Karlsson & Sjöström, 2007). Older people, owners of hunting dogs and people with less knowledge of wolves had a more negative attitude towards them (Ericsson & Heberlein, 2003; Karlsson & Sjöström, 2007). Education affects attitudes but Ericsson & Heberlein (2003) noted that hunters in wolf areas had the highest knowledge but the most negative attitude towards wolves i.e. education is of importance but only to a certain degree. It is important to look at the overall picture when discussing

the effects of education on attitudes toward wolves (Ericsson & Heberlein, 2003). Another factor that can influence the attitudes is experience with wolves. Negative experience with wolves e.g. losing an animal to wolves can affect the attitude towards the animal and towards wolf conservation (Naughton-Treves *et al.*, 2003).

Economic loss due to predation is also a factor that could influence attitudes towards wolves. Even though compensation programs exist the fact that predation can lead to large economic losses may influence the attitudes towards wolves and result in intolerance towards the animal (Muhly & Musiani, 2009). The compensation program in Sweden compensates for killed and injured animals by protected wildlife and it also provides subventions for preemptive measures (Naturvårdsverkets föreskrifter och allmäna råd [NFS 2008:16] om bidrag och ersättningar för viltskador according to 11 och 12 §§ viltskadeförordningen [2001:724]).

Connection between attitudes and non-consumptive effects

As stated above, non-consumptive effects could have a negative impact on the economic profits in livestock management due to weight loss, impaired reproduction and stress in the affected animals (Laporte *et al.*, 2010; Muhly *et al.*, 2010; Travers *et al.*, 2010). Economic loss due to predation is a factor that could influence attitudes towards wolves negatively (Muhly & Musiani, 2009). This influence may be of great importance considering that livestock owners are not compensated for non-consumptive effects in Sweden. The Swedish compensation program for predation on livestock only mentions secondary damages like missing animals after an attack by a predator (NFS 2008:16). Since there seem to be a lack of information about non-consumptive effects in animals attacked by a predator in Sweden, the information about how these effects could influence the attitudes towards wolves seems to be almost non-existent.

Aims of the study

Since economic loss could influence the attitudes towards wolves, and the number of attacked animals by wolves affects the magnitude of the economic loss, it is of interest to know if the attitude is affected by the number of attacked animals. The aim of this study is to assess if the number of wolf attacks on livestock and the number of attacked animals can influence the attitudes towards wolves in Sweden. The aim is also to discuss what other factors could influence attitudes towards wolves and if attitudes could be influenced by non-consumptive effects since they are of economic importance. The questions that this study wants to answer are:

- Are the attitudes towards wolves in Sweden affected by the number of wolf attacks and the number of animals attacked by wolves?
- Which other factors can affect attitudes towards wolves?
- Can non-consumptive effects influence the general attitude towards wolves in Sweden?

Method

To find information about attitudes towards wolves or predators in Sweden an internet search was made on “attityder till varg” (attitudes towards wolves). A hit to The Swedish University of Agricultural Science (SLU) website were chosen (http://www.slu.se/sv/om-slu/pressrum/slu-i-samhallsdebatten/vargens-levnadssatt-och-vara-attityder) and there a report about attitudes towards predators in Sweden were found called “Om svenskars inställning till rovdjur- och rovdjurspolitik” (About Swedes attitudes towards predators and predator management). This report was chosen since it included information about attitudes from more than one year and the report came from researchers at a university and would hopefully be relatively unbiased.

The information needed about attitudes was collected from this published report by Sandström & Ericsson, (2009). This report contained information about the Swedish populations attitudes towards large predators. The report included data from 2004 and 2009 i.e. information from a survey made in 2004 was included together with a survey made in 2009. This survey is made by SLU every fifth year, but the data from 2014 had not yet been published. The information about wolves were extracted from the report and converted to suitable charts. Information about the overall attitudes in Sweden, and attitudes in the counties Norrbotten, Västerbotten, Jämtland, Västernorrland, Gävleborg and Dalarna were chosen. This was the existing information about wolves in the study except for the county Stockholm which only included information from 2009.

Data about attacks on livestock by wolves, including not only the number of attacked livestock but also the number of attacks made by wolves, were collected from the webpage of the Wildlife Damage Center in Sweden (www.viltskadecenter.se). In this study the concept of attacked animals include killed, injured and missing animals. The data about the number of attacked livestock from the years 2004 to 2009 were extracted and compiled to usable data in an external spreadsheet application (Microsoft Excel).These years were chosen to be able to make a comparison with the information about attitudes. The number of killed, injured and missing animals following a wolf attack were added up and put into a table. The number of different species attacked and the total number of attacks were also put in to the table. Data about the number of attacked animals in the counties Norrbotten, Västerbotten, Jämtland, Västernorrland, Gävleborg and Dalarna were extracted to enable a comparison with the information about attitudes. All data about the number of attacked animals were converted into suitable charts, one showing the total number of attacked animals and one showing the total number of attacked animals in the counties mentioned above. The data on the number of wolf attacks were only available from 2007, therefore the information about the number of wolf attacks in this study only include data from 2007 to 2009. These data were extracted and put into a table, and later converted into a chart.

Results

Attitudes towards wolves

According to the report by Sandström & Ericsson (2009) the positive attitudes towards wolves in Sweden changed slightly between 2004 and 2009. On a national level the attitudes became slightly more positive as seen in Fig. 1. In 2004 the positive attitudes towards wolves was 64% and in 2009 it had increased to 71%. The positive attitude increased with 7 percentage points in 5 years.

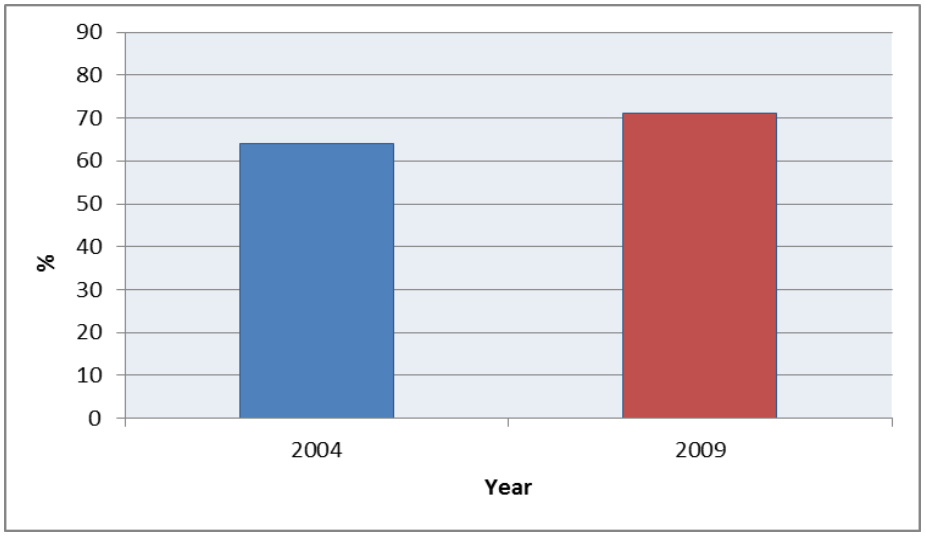

Figure 1: Positive attitudes towards wolves on a national level according to Sandstöm & Ericsson (2009).

In difference with the national attitudes, the positive attitudes in counties with established populations of predators varied. A slight decrease in the positive attitudes towards wolves could be noted in all counties except in Jämtland and Västerbotten (Fig. 2). Stockholm had a high proportion of positive attitudes in 2009 with 81% (Sandström & Ericsson, 2009).

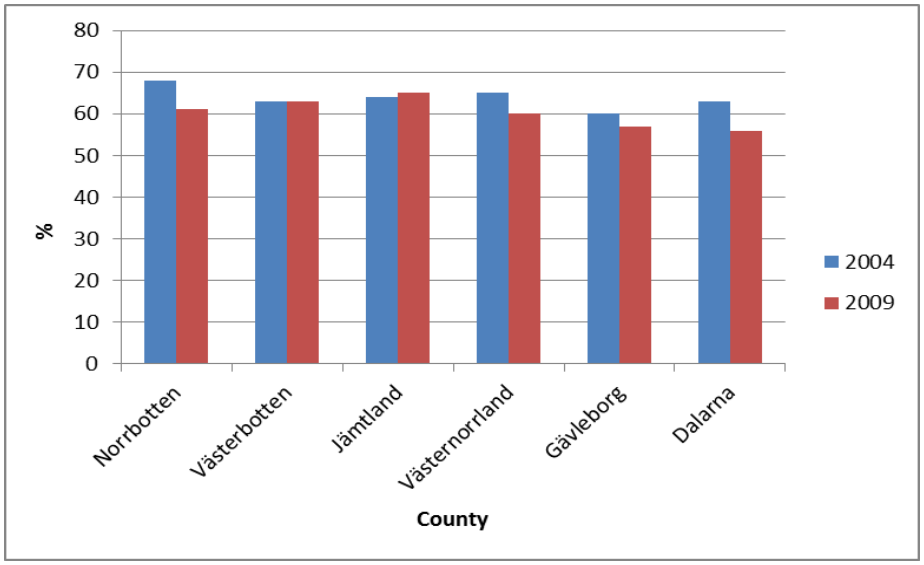

Figure 2: Positive attitudes towards wolves in counties with established populations of predators according to Sandström & Ericsson (2009).

More detailed information about attitudes towards predators in Sweden can be viewed in the report by Sandström & Ericsson (2009).

Wolf attacks

The number of attacked animals increased from 2004 to 2009 except in 2007 (Fig. 3). A steady increase from 2007 to 2009 could also be noted. More detailed data about the number of attacked animals, like which kind of livestock was attacked can be viewed in Table 1. The number of attacks also increased from 2007 to 2009 (Fig. 4). From 2007 to 2009 the number of attacks increased by approximately 89% (88, 57%). The number of attacked animals increased by approximately 229% (228, 66%) from 2007 to 2009.

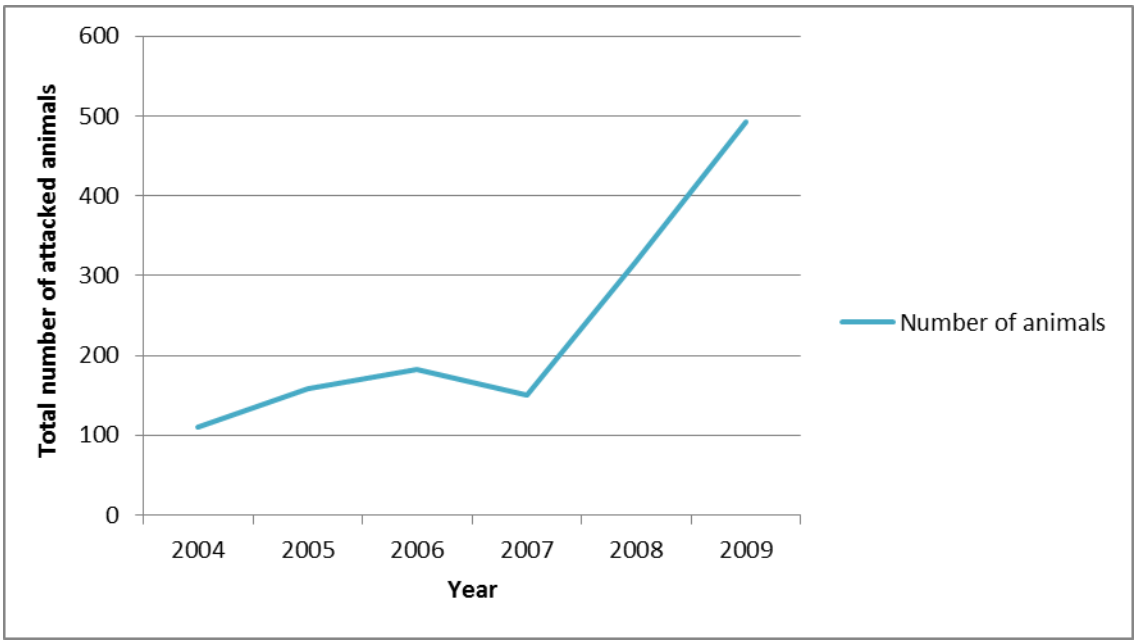

Figure 3: The total number of livestock attacked by wolves between the years 2004 and 2009 in Sweden.

Table 1: The total number of wolf attacks and the number of livestock attacked by wolves between 2004 and 2009 in Sweden. The category "Other" refers to reindeers outside the Sami reindeer husbandry.

Year	2004	2005	2006	2007	2008	2009
Sheep	102	153	179	141	292	487
Cattle	8	5	4	7	18	6
Goat					5	
Horse					2	
Other				2		
Total number of attacked animals	**110**	**158**	**183**	**150**	**317**	**493**
Number of attacks				35	62	66

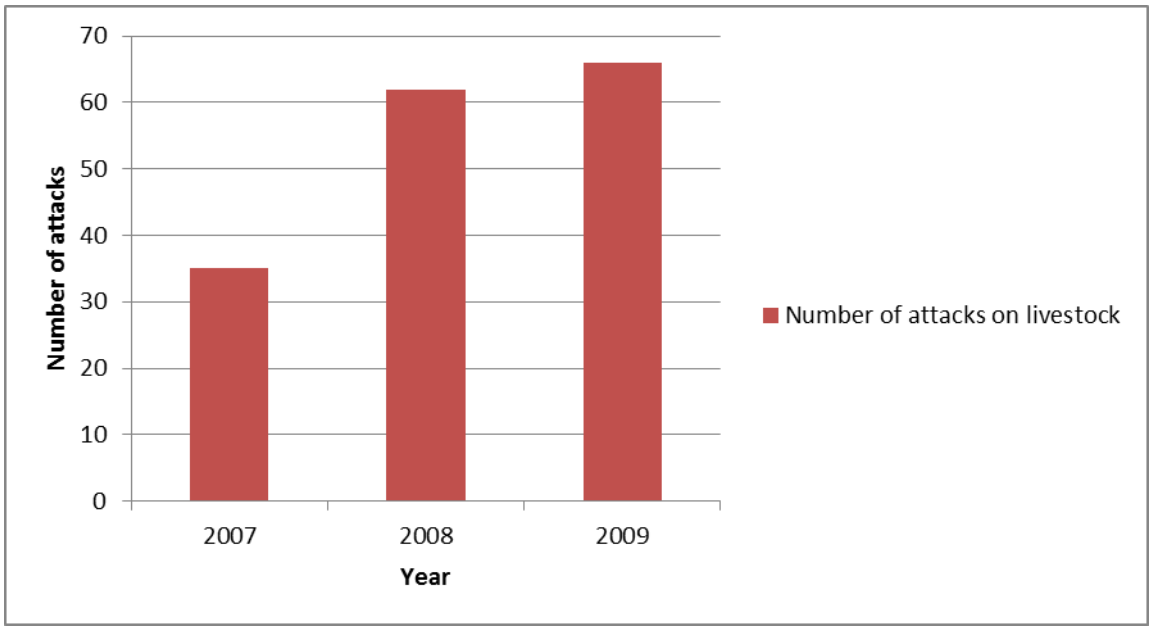

Figure 4: The total number of wolf attacks on livestock between 2007-2009 in Sweden.

The number of livestock attacked by wolves in counties with established populations of predators can be viewed in Fig. 5. Dalarna had the highest number of attacked animals in all years except 2005 where the neighboring county Gävleborg had a higher number. The number of attacked animals varied from year to year but the highest number was noted in 2009, where Dalarna, Jämtland and Västernorrland had a high number.

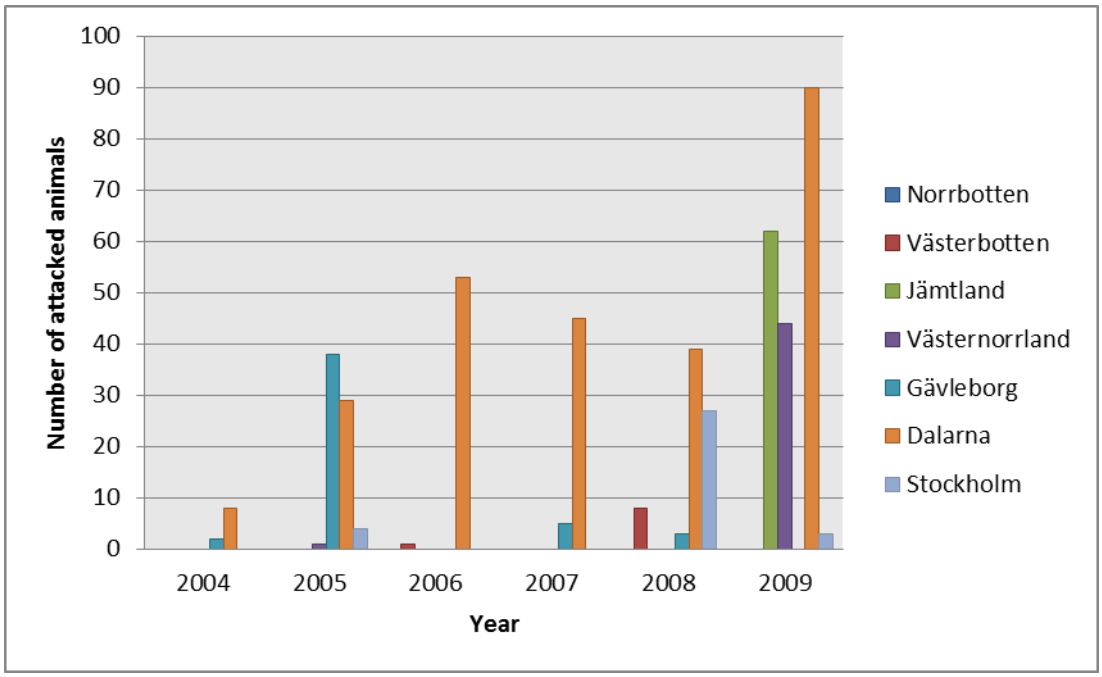

Figure 5: The number of attacked livestock by wolves in counties with established populations of predators between the years 2004 and 2009.

Discussion

It is important to know what influence peoples attitudes towards wolves since this affects their tolerance for wolves. Peoples tolerance is an important factor when managing wolves and also in trying to solve the human-wolf conflict. One important factor to consider in this conflict is predation on livestock and how it may affect the general attitudes towards wolves.

The results in this study show that on a national level the positive attitudes towards wolves was quite high in 2009, this in spite of the increase in number of attacked animals. This indicates that the overall population in Sweden liked wolves and had a positive attitude towards their existence in the country. This kind of national overview of attitudes is important, but on its own it is slightly misleading. The overall public may not encounter any problems with wolves and many people may not have any experience with them at all. To solve the problem between humans and wolves it is important to know the opinion of persons who have encountered problems with wolves. The results show that in most of the counties with an established predator population, the positive attitudes towards wolves decreased between 2004 and 2009. Even in the counties were wolf attacks were scarce and there are no established wolf populations, like Norrbotten, the attitudes towards wolves were less positive in 2009. The exception in this case was Västerbotten where the attitude did not change and Jämtland where the attitudes increased slightly.

In Dalarna the number of attacked animals increased from 2004 to 2009 and the positive attitudes declined. The decrease in positive attitude could be connected to the increase in attacks since Naughton-Treves *et al.,* (2003) noted that negative experience had an impact, even though lesser, on attitudes towards wolves. This study was made in Wisconsin (U.S.A.) and it could be questioned if the respondents in that study can be compared to respondents in Sweden. Different countries have different cultures which could affect the populations view on wolves. They can also have different compensation programs and management programs for wolves that could affect the residents opinion. Even though it was not made in Sweden or Scandinavia, it was made in an area with a recovering wolf population where predation on livestock had increased. This resembles the situation with wolves in Sweden.

The results for Dalarna could, in addition to attacked animals, be connected to proximity since the respondents in this county live closer to wolves than counties without wolf territories. As seen in the studies by Ericsson & Heberlein, (2003) and Karlsson & Sjöström, (2007) proximity is one of the most important factors when determining attitudes. In accordance with this the results show that in both Dalarna and Gävleborg, where more than one wolf territory exist, the positive attitudes were lower in 2009 than in the other counties. This in comparison with Stockholm where the positive attitude towards wolves were high in 2009, even though a wolf territory, and other large predators, exists in the county. The positive attitudes could be because the majority of the citizens in Stockholm live in densely populated areas were wolves, and other large predators, do not reside and the attitudes of these people outweigh the attitudes of the people living in close proximity to wolves. Stockholm could therefore be counted as a county were most residents do not live in close proximity to wolves and the positive attitude could be explained by the “proximity-factor”.

But even if proximity had a strong impact on attitudes in these parts it is probably not the only factor aside from attacks. Naughton-Treves *et al.,* (2003) noted that social group was the strongest predictor of tolerance towards wolves in Wisconsin (U.S.A). This means that people in counties with wolf populations may have a higher probability of knowing someone who have had a negative experience with wolves and it is also probable that this person will be less tolerant if his or hers surrounding have a negative attitude towards wolves. Another factor that might influence the attitudes may be the impact wolves have on game. Wolves in Scandinavia mainly hunt moose (Viltskadecenter, 2014a; Kojola *et al.,* 2004) and moose is a popular game species among Swedish hunters. The affect wolf predation has on the moose population might result in negative attitudes from hunters. Both Ericsson & Heberlein (2003) and Karlsson & Sjöström (2007) noted that hunters had a more negative attitude towards wolves in Sweden. Both these studies are highly relevant since they were made in Sweden and both had well thought out methods to include all stakeholders and include attitudes from people with different interests. Bisi *et al.* (2010) also noted that hunters had a more negative attitude towards wolves in Finland. These hunters saw wolves as a severe threat to hunting dogs and hunting. There are also factors that could affect the attitudes in a positive way. For example Bisi *et al.* (2010) saw that conservationists had a more positive attitude towards wolves than other respondents.

It is likely that all of the factors mentioned above, and probably others, influence the attitudes in areas with wolves since people might have different reasons for their opinion. It is important to remember that people think in different ways and have different experiences, and that several factors combined are the basis of their opinions. It can be extremely hard to distinguish which factors are most important since everything in our surroundings effects us.

There could be several reasons why the attitudes would be less positive towards wolves in a county like Norrbotten where wolves generally do not exist. It could be because people in these parts have problems with other large predators, such as bear (*Ursus arctos*), wolverine (*Gulo gulo*) and lynx (*Lynx lynx*), and that they therefore have a negative attitude towards all large predators. It could also be because they know what damage the wolf could do if it existed in these parts, maybe they know someone who has had problems with wolves or maybe they have heard stories. There may be many hunters in the county and several may own a hunting dog, both which affects attitudes (Ericsson & Heberlein, 2003; Karlsson & Sjöström, 2007). Another reason could be that the reindeer husbandry practices of the Sami people is located in the north of Sweden, and since the reindeers are free roaming, wolves could cause damage if they were established in the area. This could affect the attitudes of reindeer owners.

The results in the present study indicates that the number of attacked livestock do not influence attitudes a great deal. In some counties were the attacked animals had increased, the attitudes had decreased, but in other counties like Jämtland the attitudes had increased slightly even though attacked animals had increased greatly in 2009. This could be due to the fact that the survey in 2009 was made in June but the number of attacked animals was from the whole year. Wolf attacks on livestock generally occur during spring and autumn and therefore it is likely that not all attacks had happened when the survey was made in 2009. Attitudes may not change directly as a result of negative experience but may be delayed. It would be interesting to see if the attitudes have decreased in Jämtland after

2009, since the number of attacked animals was high in that year. This would indicate if attitudes have a delayed response to wolf attacks.

Also in Gävleborg the positive attitude had decreased in 2009 but the number of attacked animals was highest in 2005 and no attacked animals were recorded in 2009. It is also evident when you look on a national level that the number of attacked animals does not always influence attitudes negatively. The number of attacked animals for the whole country had increased but so had the attitudes on a national level. All this shows that it is unlikely that the number of attacked animals are the main influence since the attitudes do not seem to correlate in any way with the number of attacked animals. It is more likely that other factors, like distance and social group, are playing a bigger part in affecting peoples opinion. That does not mean that wolf attacks are not an important factor, it is likely that it affects attitudes, together with the other factors, but to a lesser degree. It is also important to remember that culture could have a strong and significant influence on attitudes. Since wolf is a species that has been pictured as something bad or evil throughout history (Mech, 1981), it may be easier for people to believe bad things about wolves than other large predators. This cultural influence may be hard to change and it might take a long time, therefore it is important to include this when discussing attitudes.

Non-consumptive effects

Livestock owners that loose animals to wolves are compensated in Sweden. They are compensated for veterinary costs of injured animals and other proved costs as a result of a wolf attack (NFS 2008:16). The animals that survive the attack may suffer from non-consumptive effects that could result in significant economic losses for the owner. Steele *et al.* (2013) calculated that the costs of indirect effects of a wolf attack could be as high, or higher than the direct effects of an attack. This was estimated on farms in the Rocky Mountains region (U.S.A) and might therefore not apply to the situation in Sweden. The economic structure might be different in this area compared to Sweden, and the livestock husbandry practices might also be different which could affect the results. But together with other research it gives an indication that non-consumptive effects could be relevant in other parts of the world as well.

It is hard to deny that money affects people and their attitudes. Since livestock owners are not compensated for non-consumptive effects in Sweden, and these effects could result in great economic losses there might be reasons to believe that this have an impact on the owner. This impact may show in the attitudes towards whatever leads to the economic loss, e.g. the wolf. The scientific literature about non-consumptive effects in Sweden is very scarce and so is including non-consumptive effects in surveys about attitudes towards predators. It would be very interesting to see if non-consumptive effects could have an impact on the overall attitude towards predators and if you could improve attitudes by compensating for non-consumptive effects. It is mentioned that compensation programs may be inadequate to improve peoples attitudes towards, for example, wolves (Naughton-Treves *et al.*, 2003) but this could be due to how the compensation program is built and working and not to the actual idea about a compensation program. On the contrary, many people are positive to the existence of compensation programs (Naughton-Treves *et al.*, 2003).

One problem with the idea about compensating for non-consumptive effects is how this would be implemented practically. It may be hard to prove that animals suffer from non-

consumptive effects and to do so in an easy and economically sustainable way might be even harder. Since there are little research about non-consumptive effects in Sweden this is something that has to be investigated first. Research is also needed about how livestock owners would feel about compensations for non-consumptive effects and if it could improve attitudes towards predators. If the research shows that such a compensation system for would be profitable, a functioning system has to be constructed. All this takes a lot of work and could cost a great deal of money. But if it is possible to find a system to compensate for non-consumptive effects, it might be a step on the way to make people more tolerant towards the wolf even though it might not solve the conflict between wolves and humans. Even a small step in this direction might help change the way people perceive predators and eventually help solve the existing conflict.

Sources of error and future research

Some of the data and information gathered for this study is almost 10 years old and can therefore be questionable in its relevance. New information about the attitudes towards predators in Sweden should be due presently, since the survey from SLU is made every fifth year. This data would have been more relevant and would have given a more accurate picture of the situation today. It would have given an overall picture about how the attitudes have changed in the last 10 years and how they look compared to the number of animals attacked by wolves. The method used in the present study makes it possible to add this data and to continouously add new data to see if the results changes.

It would also have improved the reliability to search for more than one study about attitudes, to give a more accurate picture of the situation. The study used only included more specific information about attitudes from the northern parts of Sweden where large areas are not inhabited by wolves. It is relevant to include these parts but preferably together with the other parts of Sweden, especially the parts with a high abundance of wolves. Other interesting parts to include would be areas were the wolf might soon be established. It would also have been preferable to include scientific surveys about attitudes. All this would improve the results since it would have given a more accurate picture of the situation today. However, the method used gave a result that was easy to overview and compare. It also gave a result that helped answer the questions in this study. For future research it would be interesting to include and compare attitudes from other countries to see if historical and cultural factors could be of importance.

Another error in this study is that the information about attitudes is only available from 2004 and 2009. This information does not say anything about how the attitudes have changed between these years. It is possible that they have increased and then decreased again or vice versa. It would have been interesting to include data about attitudes from the years between 2004 and 2009 to see if the attitudes have fluctuated.

This study indicates that wolf attacks are not the main influence on peoples attitudes towards wolves. This implies that it is not enough to prevent wolf attacks to improve peoples attitudes. It is important to know this since attitudes affects the conservation of the wolf and is connected to its survival in Sweden. This study could be used to show the general public that wolf attacks on livestock is not the only issue in the human – wolf conflict. This study could also be used to further investigate in detail what affects peoples attitudes the most and what can be done to improve the tolerance towards wolves, for

example in the form of compensation programs for non-consumptive effects. Since non-consumptive effects seem to be of importance it would be interesting to investigate if this occurs in Swedish livestock that have been attacked by a predator. It would also be relevant to investigate if these effects influence the welfare of the livestock and if they result in economic losses for the owner.

If these questions would be answered it could change the view on predator attacks on livestock. It could affect the conservation of predators since the result of these questions may change the attitudes towards predators both positively and negatively. It could improve attitudes if the livestock owners feel the government acknowledge non-consumptive effects as a problem and try to solve it. It could also decrease the positive attitudes since it shows that an attack from a predator results in more damage than former believed. The answer of these questions could also help in improving the welfare of livestock that have been attacked by a predator, and of those in the risk zone of being attacked.

Conclusion

The questions this study wanted to assess was:

- Are the attitudes towards wolves in Sweden affected by the number of wolf attacks and the number of animals attacked by wolves?
- Which other factors can affect attitudes towards wolves?
- Can non-consumptive effects influence the general attitude towards wolves in Sweden?

The present study indicates that attitudes towards wolves are only partly connected to the number of attacked animals or the number of attacks. Wolf attacks may affect attitudes but it is probably not the strongest factor. Other factors that may affect attitudes are proximity, social group or if the respondent is a hunter or not.

There is a lack of scientific literature about non-consumptive effects in Sweden but it is probable that non-consumptive effects have an impact on the economy of livestock owners. This in turn could affect the livestock owners attitude towards, for example, wolf. More research is needed to establish if non-consumptive effects can influence attitudes towards wolves.

Populärvetenskaplig sammanfattning

Vad påverkar våran syn på varg egentligen?

I dagens samhälle finns på många håll i världen en konflikt mellan människa och rovdjur. Denna konflikt beror till stor del på att rovdjur angriper och ibland dödar tamdjur. I Sverige cirkulerar stora delar av den konflikten runt varg (*Canis lupus).* Vargar i Sverige jagar främst älg (*Alces alces)* men kan även angripa tamdjur, och då främst får. Just denna situation, när varg angriper tamdjur, har resulterat i en polariserad debatt där känslorna får styra istället för vetenskapen.

Attityder till varg bland den svenska befolkningen påverkas av flera saker. Forskning har visat att närheten till varg är av stor betydelse för attityden. I de flesta fall är det så att ju närmare vargen du bor desto mer negativ attityd har du. Många är positiva till att varg finns men helst inte där man själv bor. Andra saker som har betydelse för attityden är om man är jägare eller ägare till en jakthund; där dessa personer oftast har en mer negativ attityd till varg. Något som också påverkar attityden är om man har en negativ upplevelse av varg. Forskning har visat att negativa upplevelser av varg gör att toleransen för varg sjunker.

En förekommande negativ upplevelse av varg är angrepp på tamdjur. Rovdjursangrepp på tamdjur resulterar i döda och skadade djur. Förutom det kan indirekta effekter förekomma. Rovdjursangrepp kan resultera i stress, sämre tillväxt, försvagat immunförsvar och försämrad reproduktion hos de angripna djuren. Dessa indirekta effekter kan leda till stor ekonomisk förlust för tamdjursägare som har varit med om ett rovdjursangrepp. Stor ekonomisk förlust skulle kunna försämra attityden mot det som orsakade förlusten, exempelvis varg. Därför kan man tänka sig att indirekta effekter kan påverka attityden mot varg i Sverige.

I en studie gjord inom ett kandidatarbete vid Sveriges Lantbruksuniversitet utvärderade man om attityder till varg kunde kopplas till antalet vargangripna tamdjur. Satistik på hur många vargangrepp och angripna tamdjur som hade skett i Sverige mellan 2004 och 2009 jämfördes med information om attityder från 2004 och 2009. Man såg att även om antalet vargangripna tamdjur hade ökat i hela landet så hade den positiva attityden till varg också ökat på en nationell nivå. I de flesta utvalda rovdjurslän hade attityderna däremot minskat, även i de rovdjurslän där varg inte fanns. Dock såg man inget tydligt samspel mellan positiva attityder till varg och antalet angripna djur. Resultatet indikerade att andra faktorer påvekar attityden till varg mer. Dessa andra faktorer skulle kunna vara närhet till varg, social grupp eller om personen är jägare eller inte. Social grupp är en viktig faktor då personer i ens omgivning har stort inflytande på ens åsikter. Jägare jagar ofta älg i Sverige vilket är vargens främsta byte. Detta gör att konkurrens kan uppstå mellan jägare och varg vilket kan påverka jägarnas attityd till vargen.

Alltså verkar inte vargangrepp ha så stort inflytande på attityden. Dock är det inte så enkelt, då personers uppfattning påverkas av mer än en sak. Vargangrepp kan ha betydelse men troligen i samverkan med andra faktorer. Det är svårt att tänka sig att en fårbonde vars får blir angripna av varg inte påverkas av detta. Speciellt om, utöver de dödade djuren, de överlevande djuren får långvariga problem efter angreppet på grund av indirekta effekter. I Sverige kompenseras lantbrukare för dödade och

skadade djur om detta orsakats av fredat vilt, som exempelvis varg. Dock blir de inte kompenserade för indirekta effekter. Forskning har visat att indirekta effekter kan resultera i större ekonomisk förlust än de direkta effekterna (skadade/dödade djur). Att djurägarna inte blir kompenserade för dessa indirekta effekter kan göra att deras attityd till rovdjuret i fråga försämras ännu mer. Därför skulle det vara intressant att utforska om ett kompensationssystem för indirekta effekter kan förbättra svenskarnas inställning till varg. Kanske kan detta till och med vara ett steg i rätt riktning för att lösa konflikten mellan människa och varg.

Sammanfattningsvis kan man säga att flera faktorer i samspel ligger till grund för svenskarnas inställning till varg. Om man vill förändra den inställningen är det viktigt att veta vilka faktorer som är viktigast. Det är inte så enkelt som i sagorna, där vargen helt enkelt bara är elak och därför tycker ingen om den.

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